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Energy Efficiency, Demand Response and Distributed Energy Resources in ERCOT: Tools and Opportunities to Help the Public

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Workshop, Public Utility Commission of Texas

Don’t forget the public: Focusing on Demand-side is just one good first step

- People’s livelihoods, health and in some cases their lives were put on the line by what happened during and after Winter Storm Uri
- As the Public Utility Commission of Texas, we can not forget the public, and in particular residential consumers who will bear the brunt of failures, particularly those living in older homes or apartments, who have limited incomes, and may have underlying health conditions, or be faced with other threats from climate impacts or pollution
- Sierra Club and many others ask that before you take any major reforms, you consider deliberate polling to see what residential consumers want to see in any changes
- We ask you have at least one “open” workshop at which any member of the public can make brief comments or presentations
- This hearing is evidence you are taking the demand-side of our electric grid seriously
- Focusing on demand side is very important: half the equation and in particular impacts residential consumers
- More than half of peak load is residential and small commercial heating and cooling.

PUC: Many tools in the toolbox

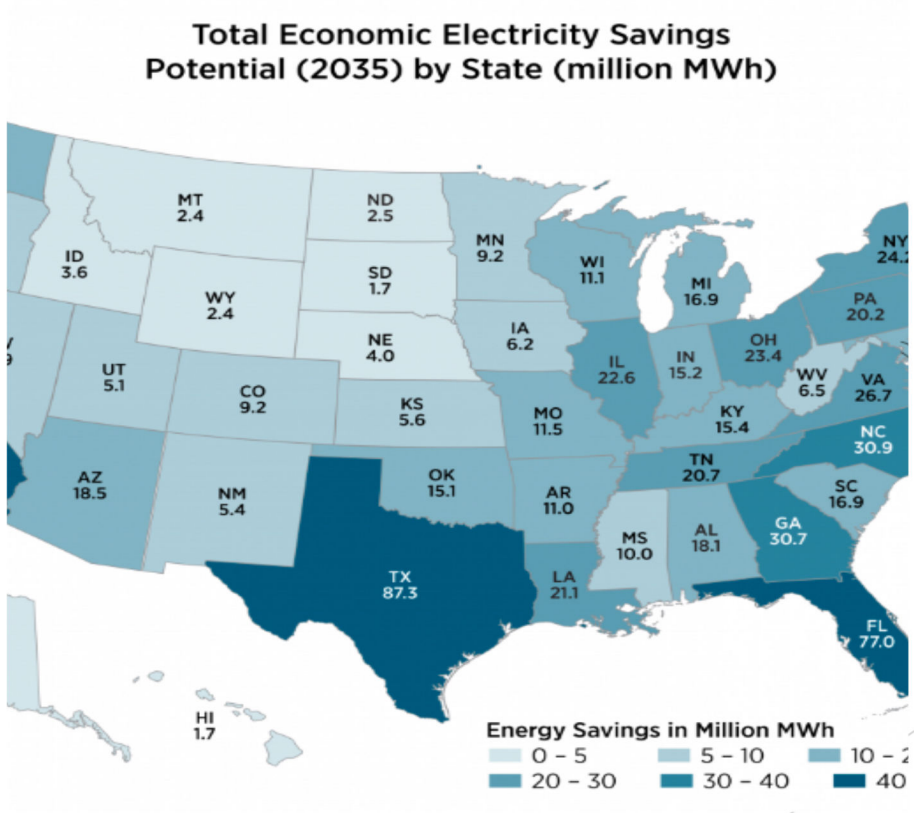
Category	TDU Energy Efficiency/Load Management Programs	ERS (Emergency Response Service)	Ancillary Services	Market/Other
Residential DR	Yes, but limited capability and summer only	Very limited in ERS program	Commercial and industrial only, though efforts like non-controllable loads in non-spin could be expanded.	Limited Price-Responsive, some NOIE programs, limited use of SMART meters
Energy Efficiency	Based on 20% capacity factor of 0.4 percent peak goals	NA	NA	NOIE programs, Federally -funded weatherization programs, SECO Building Code efforts
Distributed Generation	N	Yes	Mainly Storage	NOIE programs, new investments in storage, community solar
Behind-the-meter Distributed Generation	Some limited solar/storage incentives	Yes	NA	NOIE, New entries to market

What does the Energy Efficiency Rule say?

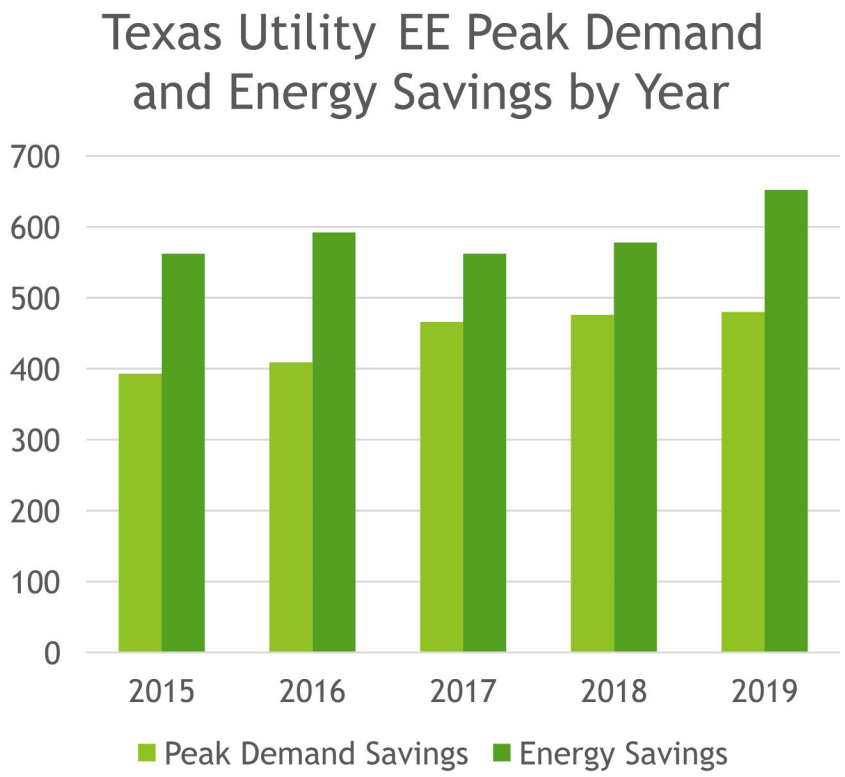
- **". . . ensure that all customers, in all eligible customer classes and all areas of an electric utility's service area, have a choice of an access to energy efficiency alternatives that allow each customer to reduce energy consumption, peak demand, or energy costs. . . ."**

We can’t have a resilient, reliable grid without focusing on where people live and work: residential and small commercial buildings

- Texas was first state to enact an Energy Efficiency Resource Standard (EERS) – a required goal for transmission and distribution utilities - but is now ranked 27th of all states on EERS policy
- Texas IOUs help reduce peak demand by nearly 600 MWs (a coal plant worth) but our potential is much greater
- Texas’ goal is based on 0.4% of peak demand, and currently only achieves 0.19% energy savings
- **If Texas were to adopt a median goal of what other states do (1%) we would quintuple the amount of savings from our programs (approximately 2,436,000 MWhs).**
- NOIEs are required to report DR and EE programs but have limited programs as well, though CPS Energy and Austin Energy have been leaders and meet a 1 percent goal



Texas Energy Efficiency Goals & Programs: Big Success but Room for Growth



- In 2020, Tetra Tech, which evaluates all Public Utility Commission IOU Utility efficiency programs, found Texas utilities in 2019:
  - Reduced peak demand by 479,912 Kilowatts at lifetime savings cost of $16.94 per kW.
  - Reduced overall energy use by 651,950,647 Kwhrs at lifetime cost of $0.01 per kWh.
  - In highest rated programs, residential consumers saw energy use reduced by 10%
  - In highest rated program, low-income consumers saw 20% reduction in energy use
  - Previous studied have found a six-to-one benefit to the economy compared to cost of programs
  - Tens of thousands of jobs have been created through the EE programs, which include solar rebates, and are implemented by private, third -party independent businesses known as ESCOs

EE: Our First Fuel?

EE programs reduce the likelihood of a grid emergency by reducing peak demand. In the case of a grid emergency, or failure, EE programs keep people safer in their homes longer.

Another focus for Texas must be building codes.

PUC has the authority to change goals and programs.

EE and DR are two sides of the coin – EE reduces overall load, and DR deals with peaks. We need both.

- PUC programs have focused on commercial DR program that are mainly focused on 4-month summer period, even though rules allow for winter peaks
- Low-income and Hard to reach are limited but could be expanded
  - "Savings achieved through programs for hard-to-reach customers (consumers with incomes below 200% of federal poverty guidelines) shall be no less than 5% of the utility's annual demand reduction goal."
- Energy goal based on a 20% load factor. Very little energy savings and mainly focused on summer peak reduction. Can change to focus on energy savings.
- Energy Efficiency Cost Recovery Factors (EECRFs) Cost ceilings. Can change.
- PUC can refocus programs on energy saving and winter peak, including use of new technologies like storage, solar, and water heaters

Smart Meter Texas: Open it Up

- Texas – ie ratepayers --have invested literally billions in SMART Meters, yet most residential consumers have not been able to take advantage of programs which use this technology;
- Better and more timely access for retail electric providers, third-parties and customers, including through Home Area Networks, would expand the use of demand response;
- SMART Meters could be key to opening up economic Demand Response.

ERS: Double and Focus

- Emergency Response Service (ERS) includes both distributed generation as well as demand response programs
- Residential DR programs including 30-minute weather-sensitive load program that can be aggregated, have been very limited.
- Removing or doubling the cap, and growing weather-sensitive loads for reliability could help develop price-responsive programs in addition to reliability programs

Creating a market for residential DR

- Very limited residential DR In market, beyond ”Nights and Weekends Free”
- Texas retail focus is on low cost not flexible management programs
- PUCTX could create a requirement that all Load Serving Entities offer DR programs and create a statewide reliability requirement
- Just as we have created energy efficiency and renewable goals, we could create a statewide goal for all LSEs, including NOIEs and REPs, with trading allowed
- A 5% winter and summer peak residential DR goal is achievable

New Technologies at the Distributed Scale?

- PUCT and ERCOT have taken steps to create visibility on distributed generation but we have not yet taken steps to fully integrate DG in our markets and ancillary services. Allowing aggregation of DR and DG to fully participate could lead to a more resilient, flexible grid.

Category	Registration	Compensation	Unit Size	Amount, 2019
Unregistered DG	N	N	Less than 1 MW	850 MWs, 1,120 MWs in 2021
Settlement-Only Distributed Generation	Y	Y on energy but only at settlement price	1 to 10 MWs	850 MWs
Distribution Generation Resource	Y	Y on energy and ancillary	1 to 10 MWs	2 MWs in 2019 but more coming through storage